UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON

Monday, June 1, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 minutes

Crops and Soils Interview No. 22: Roadside Markets.

ANNOUNCEMENT: Your farm reporter at Washington is going to take us down the road with him today. At least, he is going to report to us what specialists of the United States Department of Agriculture have to say about roadside markets ---- All right, Mr. Reporter, let's be on our way! -----

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I guess maybe I'm coming down your road now!

Of course, roadside markets have passed the mushroom stage in most parts of the country. Nowdays, farmers go into the roadside market business, or stay out of it, in a business-like way. But I venture to say, that there are few farmers on well-traveled roads who haven't given roadside markets a thought or two in the last few years. And those of you who are running markets are interested in ways of improving the business, and in knowing how the other fellow does it.

That's why I figured you'd be interested in what Miss Caroline B. Sherman has to say on this subject. You know, when it comes to marketing, you have to hand it to the women folks! And Miss Sherman is an economist in the United States Department of Agriculture. She has made a special study of what has been done in the way of roadside marketing in the different states. She has found out some of the reasons folks stop at some markets, and pass others by. She has some pretty good ideas as to why they buy at some stands, and drive on without buying at others.

Of course, she points out that your location has a lot to do with it. If you are counting on selling to city folks chiefly, you have an advantage if you are located on the right side of the road to motorists going back into town. A location that can be seen from some distance has an advantage not only for the owner, but for the prespective customer and other drivers on the highway. Many a wreck has come from men at the wheels trying to see too much too suddenly.

Another thing -- plan your stand or store so as to provide convenient parking space, so machines won't block the highway if they stop. Many a roadstander has often seen probable customers shoved past his place by the traffic, because it wasn't safe or convenient to stop. Avoid steep grades, too.

But let's say you have picked a good location for your roadside market. That brings up the question of whether to build or not to build. As you know, profitable roadside markets vary from small open sales tables on a lawn to a permanent building of considerable size. But even for a little sales table, you will want some protection from the weather and a seat for the attendant between sales.

Miss Sherman insists the stand ought to look attractive. It may be plain and simple, she says, but it must be clean and nest if it is to get the best returns. And that is not just a notion of hers, either. She has the facts and figures of sales from successful stands in many states to show it.

However, the quality of the stuff itself is the chief thing. Motorists who buy in the country usually have freshness particularly in mind. They feel they are buying the stuff right where it is grown. If the customer finds your stuff wilted or overripe, he is more likely to pass you by next time, or to do his buying in town where the experienced merchants may be more careful as to quality and freshness.

Apparently the successful managers of roadside markets generally maintain at least an informal system of grading. The high-grade stuff will almost sell itself. But there is also a good demand for good second-grade products if they are sold as second-grade, and at a lower price.

That question of price is one every roadside market manager has to consider. It is poor business to get the prices so high you shut off business, or so low you don't make a fair profit.

What are the prices at which road-siders sell? How do they compare with regular city retail prices?

Well, Miss Sherman says that an investigation in New Hampshire found that 17 per cent of the owners tried to sell at a little above the retail prices prevailing in Boston and surrounding cities. 20 per cent sold at prices decidedly below retail. 13 per cent sold at prices between retail and wholesale, and about 50 per cent or half the roadside markets sold at retail prices. In Michigan, prices at 100 selected roadside markets were compared with prices at retail stores in near-by towns, and at 68 of those markets, the prices were found to be about the same as retail prices. About half the remaining markets averaged at least 10 per cent higher than those of near-by retail stores. The other sold at prices at least 10 per cent lower.

Of course, the question of prices is something farmers and customers are still arguing about.

As a general rule, all the studies show that customers usually hope to buy at cash-and-carry prices, since they are furnishing the delivery. Yet many of them are evidently willing to pay higher prices to get the kind and quality of stuff they want. ----

While we are on the subject, let me mention that there is a leaflet which you can get by writing to the United States Department of Agriculture for it.

Ask for Leaflet No. 68 on "Roadside Markets" -- Leaflet No. 68. -----

Getting back to the roadside, we must all remember, in connection with these questions of quality and price, that repeat orders and regular customers form the basis of continued success.

Fresh stuff of good quality attractively shown at fair prices at well-located stands goes a long way toward winning business. And neat courteous, business-like attendants often do the rest.

To build up a permanent business on repeat orders and regular customers, naturally means that you need a fairly steady supply of the chief products offered for sale throughout the season. In some instances, it may be well to make the market a cooperative venture supplied by several farms so as to insure a steady supply. Then, too, that is sometimes quite a help in tending the market.

Hours of attendance are necessarily long, and often monotonous. Farmer's families have to consider those things when they undertake roadside marketing. On the other hand, the season is usually rather short, and some members of farm families say they like the work and find it interesting to meet the folks, friends and strangers. In many instances, other members of the family look after the market while the farmer goes ahead with his job of producing the stuff.

Sometimes the home roadside market proves a fairly profitable outlet for products made in the farm kitchen, for small lots of garden produce not used at home, and for flowers from the garden, field and yard. Those things are incidental to the chief products for sale, and do not add much to the work at the stand.

But you will find all I've told you and more too in that Leaflet No. 68.

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ANNOUNCEMENT: You can get that leaflet free while the supply lasts. Write for it, either to this Station ----- or direct to the United States Department of Agriculture at Washington, D. C. Ask for Leaflet No. 68 on "Roadside Markets".

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UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON

Wednesday, June 3, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

PRODUCING MARKET EGGS OF GOOD QUALITY

ANNOUNCEMENT: And now, ladies and gentlemen, here is Your Farm Reporter at Washington. This is Your Reporter's day with poultry raisers. To-day he talks about producing quality market eggs. From Mr. A. R. Lee, Department of Agriculture poultry husbandman, he now brings you some tips on producing these eggs which have good market quality. Here he is.....

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May I tell you one of my own personal experiences with eggs?

Needless to say, I was brought up on eggs for breakfast. Bacon and eggs for breakfast came just as regularly on our farm as milking time. There's nothing strange about that, of course. In fact the five boys with whom I went to work in the city were brought up on exactly the same diet.

But perhaps the strange part of it is that our fondness for the morning helping of "bacon and" survived our early experiences in the city. Eating around at cheap restaurants because our funds were mighty slim, caused us to avoid eggs. We found we couldn't be sure about the quality of the eggs we got at these restaurants. Our appetites were accustomed to the freshest of fresh eggs, and we didn't want any other kind.

As I say, our liking for eggs was not affected. But I offer this as my testimonial to the importance of putting high-quality eggs on the market. I told Mr. Lee of this experience, and he nodded emphatically.

"That's it exactly," he declared. "You know, and I know, and everybody knows, from our own experience, that people eat a lot more eggs when the eggs they buy are of high quality. That's why a preponderance of high-grade eggs on the market always tends to stimulate demand and thus to increase prices. And that's why a preponderance of low-grade eggs has just the opposite effect.

"Fortunately, the quality of eggs in the United States has been improving right along in recent years. There's no reason any more for not eating more eggs than many of us do----in fact there's every reason why we should eat more. People who demand high-grade eggs nowadays can be sure to get all they want.

"And what is the secret of producing fine-quality eggs? "I asked.

"I really don't know any secrets about it," Mr. Lee replied smilingly. "There's nothing up my sleeve---see for yourself. Producing eggs of high quality is simply a question of three very practical steps; and these are the steps:

"First, collecting the eggs promptly; second, handling them under proper conditions; and third, getting them to the consumer while they're fresh.

"Oh is that all?" I asked.

"Simple, isn't it," said Mr. Lee. "But perhaps not quite so simple as it sounds. There are a few details, and it is the details that count."

"Bring on the details," said I. And he did---so now I'm able to bring them to you.

"Remember," he began, "that the value of eggs is affected by their size. Remember also that dirty eggs are poor eggs for market. And remember that in warm weather market eggs should always be infertile. These are some of the main points.

"Only those hens which produce good-sized eggs should be used in the breeding flock," he continued. "Guard against small-sized eggs and take every opportunity to eliminate hens that lay these small eggs. Remember that eggs which weigh less than 22 ounces to the dozen are poor market eggs. To producers I'd suggest that they use their small eggs at home, since a few small eggs tend to lower the value of an entire shipment wherever eggs are bought on the basis of grade.

"And another thing. Remember that healthy, vigorous hens of a standard variety not only lay more eggs than mongrel hens, but their eggs are larger and more uniform in color and appearance. Remember that uniformity in color and appearance adds much to the value of market eggs.

"Now about dirty eggs. In the first place, bear in mind that the hen always lays a clean egg. A dirty egg, therefore, is the result of a dirty nest or dirty feet of the hen. Keeping eggs clean is entirely a mechanical proposition, and it is largely up to the poultry raiser. A hen, you know, does not enjoy filth and dirt, and she can usually be depended upon to do her part toward keeping eggs clean if she gets a little cooperation.

"What can the poultry raiser do? I inquired.

"Well, I'd recommend in the first place," he replied, "that he provide one nest for every 4 or 5 hens and keep plenty of clean straw in the nests. He might also add sawdust or shavings to the straw---this helps to promote cleanliness. Clean eggs, of course, can be produced only in a clean house. Clean floors and clean yards are boty highly important. And of course clean litter goes along with clean floors. In very wet weather hens may be kept

confined to the house until noon to prevent mud being tracked into the nests. And one other good practice is to nail three-quarter-inch-mesh wire netting on the underside of the roosts. This prevents the hens from getting into the droppings.

I asked Mr. Lee if he recommended washing dirty eggs.

He replied that he did--with reservations. "Washed eggs spoil more quickly than dirty eggs and washed eggs do not keep so well in storage," he told me. "However, washed eggs will bring better prices than dirty ones, so I'd say that all dirty eggs should be cleaned. Clean them with a damp cloth, and rub them first as little as possible. And also be sure that the eggs are thoroughly dry before you pack them into a crate."

"Now in the summer time, we run into a special problem. Eggs deteriorate quickly in hot weather. They must be gathered at least twice a day and then kept in cool, well-ventilated places. Nests get pretty warm on summer days and eggs are also heated by other hens that come into the nest to lay. Promptness in removing broody hens from nests helps to produce better eggs.

"And, furthermore, eggs need to be kept where the air is moderately dry as well as cool. Dampness tends to cause eggs to mold. A cool pantry or a well-ventilated cellar or cave is usually the best place for eggs until they are marketed.

"Remember also, to keep eggs away from odors. They will absorb the odor of oils and onions and other such volatile substances.

"And now we come to the question of producing infertile eggs, and this is also especially important at this time of year. Of course, to produce infertile eggs the roosters must be kept out of the flock."

"What do you do with the roosters?" I wanted to know.

"Sell them, eat them, or confine them as soon as you need no more eggs for hatching purposes," came the reply. As a matter of fact, there is such a tendency to buy day-old chicks that many farmers do not need to keep roosters in their flocks at any time. And then, don't fail to get rid of your cockerels. Selling the young cockerels as soon as they reach broiler age helps in producing infertile eggs in the late summer and early fall.

He concluded with this statement: "There is nothing that will improve the quality of summer eggs to a greater extent than the production of infertile eggs."

Now, these are the most important details affecting quality, but of course they aren't the only ones. Feeding, for instance is another important consideration. Hens need grain at all seasons and they should not be forced to fill up on grass. You all know that lack of limestone and oyster shells in the ration tends to cut down egg production and to increase the proportion of cracked eggs.

Mr. Lee tells me that most poultry raisers use their cracked eggs at home while they are still fresh. Cracked eggs have very small market value and they represent a big loss to the industry every year, he told me.

And now let me summarize Mr. Lee's suggestions about marketing. Here they are:

"Market eggs promptly," he advises. "Market them at least twice a week and even three times during the summer months. Holding eggs lowers their quality.

"If possible, sell to a dealer who buys eggs on the basis of grade--- and one who does not pay the same price for all eggs regardless of their quality. If you produce high-quality eggs you are entitled to a premium over the low-grade price.

"And then, protect the eggs from sun and rain on the way to market. Remember that heat and dampness are the two biggest factors which cause eggs to spoil."

ANNOUNCEMENT: Your Farm Reporter has just told you what he learned from his friend Mr. Lee, about producing eggs of good market quality. For further information on this subject write to Your Reporter at Station_____or at the Department of Agriculture in Washington.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. Friday, June 5, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes. All Regions.

WHAT IS A COOPERATIVE BULL ASSOCIATION?

OPENING ANNOUNCEMENT: Ladies and gentlemen, once each week Your Washington Farm Reporter broadcasts a Dairy program from Station_____ in cooperation with the United States Department of Agriculture. Today Your Reporter is going to tell us about cooperative bull associations, and try to answer the question, WHAT IS A COOPERATIVE BULL ASSOCIATION? All Right, Mr. Reporter.

--ooOoo--

Folks, I want to talk to you for a little while today about co-operative bull associations. I'm talking on that subject because one of the radio listeners asked me to. He said that the organization and work of cooperative bull associations was not quite clear in his mind and that he desired more light on the subject. It's quite possible that there are other listeners in the same boat, therefore, I'll do my best today to tell you what a cooperative bull association is, and how one functions.

Mr. W. E. Wintermeyer of the United States Bureau of Dairy Industry has made quite a study of cooperative bull associations and is well informed on that subject. Knowing this, I went to see him the other day. I found him down in the basement of the east wing of Uncle Sam's big fine agricultural building that measures 750 feet across the front. He gave me plenty of information about cooperative bull associations, and now it's up to me to try to pass on to you a few of the many facts he gave me.

Let's start out with the question---WHAT IS A COOPERATIVE BULL ASSOCIATION? Mr. Wintermeyer's answer to that question runs about like this; "A cooperative dairy bull association is an organization formed by farmers for the purpose of joint ownership, use, and exchange of meritorious purebred dairy bulls." Don't get scared at the word meritorious. That simply means a worthy bull, or in plain milkbucket language, it means a good bull. A typical cooperative bull association consists of at least 5 divisions called blocks. Each block is composed of one or more members, and one bull is assigned to each block.

Now the average dairyman can't use the same bull year after year without inbreeding, so I asked Mr. Wintermeyer how they got around this in the cooperative bull association. To that question, he replied,

"To prevent inbreeding each bull is moved to a new block in the same association every two years. If there are 5 blocks in an association, and all the bulls live until they have made one complete circuit around the blocks, no new bulls need to be purchased for 10 years."

According to Wintermeyer, this systematic exchange of bulls makes it possible not only for the dairymen with the small and medium sized herds, to have the use of good purebred dairy bulls for a period of years, but to have this service at a cost of only a small part of the purchase price of one good bull.

I sometimes have trouble making my income and my outgoing expenses meet on friendly grounds, and when somebody begins to talk to me about how good a thing is----right away I want to know how much it costs. I don't know where I got that streak, but anyway I have it, and I let it crop out in this interview by asking Wintermeyer about the cost and upkeep of these association bulls.

To that he replied, "The purchase price of the bulls, and the cost of their maintenance is prorated or divided according to the number of cows owned by each member. In this way it oftentimes costs less to own a share in a number of good purebred bulls than to own one scrub or grade bull individually. Bull associations are finding favor not only among the owners of small and medium sized herds, but also among the owners of the larger herds."

I thought you listeners might like to know something about the origin, growth and development of cooperative bull associations in this country so I asked about that.

"Well," said Mr. Wintermeyer, "the first cooperative bull association in the United States was organized in Michigan in 1908. Since then there has been a steady growth in the number of associations until on January 1, 1931, there were 351 cooperative bull associations scattered through 28 States. There were 7,037 members in these associations, owning cooperatively 1,609 purebred dairy bulls. These bulls served annually 13,509 purebred cows, 37,982 grade cows, or a grand total of 58,004 cows."

I might say here that according to Mr. Wintermeyer's figures the five outstanding dairy breeds are fairly well represented in these various cooperative bull associations. For instance, on January 1, 1931, there were 1,609 bulls owned by cooperative associations. Of this number 1,054 were Jerseys, 365 were Holsteins, 169 were Guernseys, 20 Ayrshires, and 9 Brown Swiss.

Cooperative bull associations were organized for the purpose of building better dairy herds. Now the only way to judge whether or not this is being accomplished is by comparing the yearly records of the daughters of the bulls, with the yearly records of the dams of the daughters.

According to Mr. Wintermeyer the Bureau of Dairy Industry now has the records of 84 association bulls that have been proved. I'll tell what it takes to prove a bull in another talk in the near future. Each of these 84 bulls had 5 or more daughters whose yearly milk and butterfat

records were compared with the yearly milk and butterfat records of their dams. All told, the records of 725 daughters and dams have been compared. The dams to which these sires were mated, produced, on an average, 9,888 pounds of milk, containing 385 pounds of butterfat. The daughters produced, on an average, 10,304 pounds of milk, containing 414 pounds of butterfat. The daughters, therefore, excelled the dams by 416 pounds or four and two-tenths per cent in milk production, and by 29 pounds, or seven and five-tenths per cent, in butterfat production. This splendid increase in production of the daughters over such high-producing dams shows that cooperative bull associations are certainly accomplishing the purpose for which they were organized, namely, the building of better dairy herds.

Mr. Wintermeyer says that progressive dairymen are evidently believers in cooperative bull associations because there were 63 more associations functioning on January 1,1931, than on January 1, 1930.

Naturally, cooperative bull associations won't fit into all phases of dairy farming because there are many large dairymen who find it profitable to own their own bulls. However, a cooperative bull association does give the dairyman with a FEW cows an opportunity to share the services of a better purebred bull then he could often afford to buy.

Cooperative bull associations can not solve all the problems connected with the dairy industry, but they can aid in making the production of milk more efficient and more profitable on the average farm.

If you are a progressive dairyman, interested in making more money from your cows, Mr. Wintermeyer suggests that you investigate the possibilities of producing milk more economically by using good bulls. If you are not in a position to buy one of your own, or if the number of cows in your herd would hardly justify the purchase of such a bull, investigate the cooperative bull associations.

If you want assistance in this matter, or additional information, get in touch with your county agent, the dairy division of your own State college of agriculture, or if you prefer, write to the United States Bureau of Dairy Industry in Washington, D. C. You are welcome to a copy of this talk if you want it. Ask for the DAIRY FARM REPORTER OF JUNE 5, 1931.

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CLOSING ANNOUNCEMENT: This, ladies and gentlemen, closes the Washington Farm Reporter program broadcast from Station_____. Write this station or the United States Department of Agriculture in Washington, D. C., if you want a copy of the DAIRY FARM REPORTER OF JUNE 5, 1931.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

YOUR FARM REPORTER AT WASHINGTON. June 8, 1931

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

Crops and Soils Interview No. 22. Why Potatoes Run Out.

ANNOUNCEMENT: Your farm reporter at Washington has been inquiring about why potatoes run out. He went straight to the specialists of the United States Department of Agriculture about it. Now he is going to tell us what the specialists told him----- Well, Mr. Reporter, what did he say?--

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Why do potatoes run out?

You might say they "run out"; but they don't run out for the same reason we used to think. And the discovery of the real reason has meant an increase of ten to twenty bushels to the acre in our leading potato states. These three hundred and four hundred bushel potato clubs are also largely due to that discovery.

Dr. Freeman Weiss, potato pathologist of the United States Department of Agriculture, has been explaining to me just what happens when potatoes run out, and how we can prevent it. We used to think that cutting sets for planting made the potatoes lose their vigor. Now, Dr. Weiss tells me, investigators in this country and Europe agree that the only factor in the running out is the accumulation of virus diseases in potatoes.

W. A. Orton, one of the U. S. Department of Agriculture men, was the first to recognize the importance of virus diseases. And the Department has continued to lead in the fundamental research on the nature of those diseases on which the seed certification programs of the various States are now based.

Instead of just "running out", potato plants became infected with a strange virus which is carried to them mainly by plant lice or other insects. The infection is distributed in the juice to all parts of the plant. All the tubers carry it. Once a plant is infected, all its vegetative descendants are perpetually doomed to carry the infection.

There are a number of these virus diseases, including spindle tuber, leaf roll, and various types of mosaic which give the plant leaves an irregular, mottled or calico appearance.

The milder mosaic will cause an average decrease in the yield of from ten to fifteen per cent and rugose-mosaic will cut the yield of a potato plant in half. Leaf roll, in which the starch stays in the leaves instead of being stored in the tubers where it belongs, may cut the total yield from a potato field 20 to 50 per cent. In spite of the use of the best planting practices and care, the plants are just doomed to yield that much less.

Spindle-tuber, commonly referred to as "running-out" or "running long" or "offshape" or "poor-shape", causes plants to yield less and the tubers that shape which are produced take a lower grade in the market.

You might think that since these virus infections are carried by insects, the way to stop these troubles would be to kill off the insects. Dr. Weiss says when you realize that one plant louse feeding on a diseased plant and then going to a healthy one might continue the spread of the virus, you can see that control of such troubles by control of the insects is hardly practical.

It is much more feasible to eliminate the plants which act as sources of infection. And that is just what our leading seed potato states now do. Plants affected with virus as well as certain fungus diseases are rogued out in a well-organized and officially supervised program by the agencies in the different states which certify seed potatoes. Therefore certified seed is in general a guarantee that the diseases have been eliminated or reduced to very low limits.

The production of certified seed has become quite an industry in all the New England States, in New York, in Pennsylvania, in Michigan, in Wisconsin, in Minnesota, in Nebraska, and in the Dakotas and Montana.

It is even becoming an industry in some of the Southern States where a late crop is grown and where high altitude gives a climate much the same as the northern States have on account of their higher latitude.

Potatoes are a moderately cool-weather crop. A short season with cool weather is needed to produce vigorous seed potatoes. Also warm weather tends to mask the appearance of some of the virus diseases, so that infected plants can not be readily detected and rogued out. For that reason, most southern potato growers must depend on the cooler regions for their seed potatoes. In most of the certified potato States, the potatoes are thoroughly rogued three times during the season under the inspection of a State official.

That certification together with spraying and seed treatment Dr. Weiss estimates has been a big factor in the substantial increase in potato yields in our leading potato states.

Spraying is done practically all through the summer. In the more northern sections, it is chiefly done to control late blight. In the Middle States, the spraying is for the purpose of controlling fungus diseases and hopper burn. Copper lime dust or Bordeaux mixture is chiefly used.

Mosaic, and leaf roll, and spindle tuber, however, are carried in the seed. They are hereditary diseases. The way to prevent them, is to plant only certified seed. To produce such seed, potatoes practically free from those diseases are grown well away from any field where such troubles are known to be. All abnormal plants are rogued out of such plots as soon as they show up, and special care is taken to keep out weeds which might possibly be a source of infection.

Dr. Weiss says that it is best for growers who are interested in producing high-grade disease-free seed stocks to get together with the neighbors to prevent any mosaic infected potatoes from near-by defeating the plans. The problem will be much simpler, if none but disease-free seed are planted within a quarter of a mile of the seed-potato fields. Growing one variety or at most two, in the neighborhood will help.

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ANNOUNCEMENT: You have just listened to an explanation from specialists of the United States Department of Agriculture as to why potatoes "run out." This is one of the reports from your farm reporter at Washington, presented by Station---------- in cooperation with the Department.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON — Wednesday, June 10, 1931

NOT FOR PUBLICATION

Speaking Time: 10 Minutes — All Regions.

HOW THE TEST HAS HELPED OUR ANIMAL INDUSTRIES.

OPENING ANNOUNCEMENT: The big research laboratories of the United States Department of Agriculture have done much to help the man behind the plow. Your Farm Reporter at Washington has just had a talk with Dr. M. Dorset, in charge of the biochemical laboratory which has contributed a great deal to the livestock industry. He is going to tell us about his trip through the laboratory, and about his talk with Dr. Dorset -- the man who discovered the preventive treatment for hog cholera. All right, Mr. Reporter.

---ooOoo---

Folks, I want to talk to you to-day about the battle that farmers have eternally to wage against livestock diseases and troubles. Figuratively speaking, the livestock producer is a soldier who has to be on the firing line all the time. He faces the unremitting offensives of livestock diseases, germs, parasites, and other animal bushwhackers.

This battle between livestock producers and livestock-disease troubles is fierce, but the stockman is better armed each year. Modern serums and vaccines, when properly used, put many livestock enemies to flight. The United States Bureau of Animal Industry has done much to find successful ways of treating livestock diseases and troubles.

The other day I visited the office and laboratory of Dr. Marion Dorset, the quick-spoken little man from Tennessee who discovered the preventive treatment for hog cholera. His division of Uncle Sam's Bureau of Animal Industry includes the biochemical laboratory.

I asked Dr. Dorset to let me take a peep at the big laboratory over which he presides.

"Gladly," he said, and led the way through a series of big rooms filled with tables, test tubes, and white-aproned men and women.

The first thing that attracted my attention was a number of pigeons. Some were healthy specimens, others were nervous, sick, and about ready to pass in their checks. I immediately asked for information.

"Well," said Dr. Dorset, "we are always trying to find better ways of combatting animal diseases. In this particular experiment we found that pigeons did well when fed fresh pork. When we took the pork out of the ration the pigeons developed a disease similar to the beri-beri disease which has caused so much trouble in China and Japan among human beings. This experiment led to the discovery that pork both fresh and cured contains vitamin B."

As we passed along through the laboratory I saw some pieces of untanned skin in a glass case. My curiosity was aroused. I asked, "What's that doing in here?"

"That skin," he said, "is in here because we are always trying to find out more about the various diseases which levy toll on livestock. That skin is here because of anthrax, naturally a disease of cattle and sheep. Sometimes people get anthrax from imported hides, and that's why the skin is here. Of course the danger is eliminated from the finished leather -- but the wash water used on the skins in the tannery may carry the anthrax germs to streams and thus infect cattle. One of our jobs has been to find the best way to kill the germs in that wash water. We have found that the anthrax germ is one of the hardest germs to kill that we have ever gone up against, but we have worked out a method. Someday we may find a treatment that will bring anthrax absolutely under control. Of course, you understand, we have an anthrax treatment now, but if we can find something better, we want it so we can pass it on to the livestock producers."

The next thing to attract my attention was a large tray filled with test tubes. There were different colored material in these tubes. Again I asked for information.

"This laboratory," Dr. Dorset told me, "tests different disinfecting materials for germ-killing power. Carbolic acid used to be our most powerful disinfectant, and is still good, but the material in that big test tube on the end of the rack is 1,000 times more powerful than carbolic acid. One of the men here in this laboratory discovered it."

Dr. Dorset had just told me that the anthrax germ was very hard to kill, so I thought maybe this powerful liquid in the big test tube would turn the trick. I put the question to him.

"The powerful disinfectant," he answered, "that is in the test tube, is in the process of further refinement and is not ready to be given to the public at this time. When it's ready for the general public, I'll give you a ring and you can come over and get the facts about it for another radio talk."

We next passed a man working on a certain phase of the poultry disease commonly called B.W.D. That disease, as most of you know, is fatal to young chicks, and kills about 10 per cent of all chicks that are hatched in this country.

We passed another man trying to find a successful way to treat hog "flu" and still other people busily occupied with other work.

I could go ahead, I suppose, for an hour trying to give to you the impressions I got from this trip through the biochemical laboratories. But I think I had better stop here to give you the main point of my story.

That point is this: In this laboratory more than a score of scientists, jointly hired by every one of us, are working away with two main purposes in view. One purpose is to discover treatements that will PREVENT livestock diseases. That is our first line of defense.

The other purpose is to develop a second line of defense to fall back upon when we do not have any adequate preventive for a disease. Lacking a preventive, it is desirable to have at least methods of diagnosing the disease in its early stages and enabling us to use the best procedure for protecting the animals still healthy.

For our first line of defense, the scientists have developed serums and vaccines to prevent such animal diseases as hog cholera, blackleg, anthrax, and shipping fever.

We do not have a serum to prevent tuberculosis in livestock or glanders in horses. However, we do have substances which will enable us to diagnose the presence of these diseases even in seemingly normal animals. Being able to diagnose, at least makes it possible for us to know our exact situation and to take the drastic measures necessary to stamp out the infectious diseases which we can't prevent. Dr. Dorset introduced me to one group of workers making MALLEIN, the substance used in testing horses for glanders. I also met people who are working with TUBERCULIN used in testing cattle for tuberculosis. And let me emphasize this: tuberculin CAN NOT produce tuberculosis. Tuberculin contains no tuberculosis germs. It is a byproduct of the germs; it produces in animals suffering from tuberculosis characteristic reactions so that you may recognize the presence of the disease; it does no harm at all to animals free from tuberculosis.

Well I see that I must be leaving you. I want to have this thought tarry behind me:

All of this work I have been describing to you today is directed toward the discovery of facts and of medicinal substances to arm you for your fight against livestock diseases. As soon as the laboratory work and field trials have gone far enough to prove a treatment for disease prevention or diagnosis the United States Department of Agriculture issues a publication to inform you about it. Before I bid you good-bye I am going to mention five publications which you can get from the United States Department of Agriculture without charge, and which will give you the facts on how to fight some of the worst livestock diseases.

Here is the list:

HOG CHOLERA-- Farmers' Bulletin No. 834-F.
BLACKLEG; ITS NATURE, CAUSE, AND PREVENTION- Farmers' Bulletin No.1355-F
ANTHRAX OR CHARBON-- Farmers' Bulletin 784-F.
MAINTAINING THE HEALTH OF LIVESTOCK IN TRANSIT--Leaflet No. 38-L
RELIABILITY OF THE TUBERCULIN TEST-- Miscellaneous Publication No.59-M.

The United States Department of Agriculture publishes still other publications on other livestock diseases. I invite you to write to me at this station or direct to the United States Department of Agriculture stating your problem and asking for available publications concerning it.

CLOSING ANNOUNCEMENT: Your Farm Reporter's talks are presented in cooperation with the United States Department of Agriculture by Station_____ Write to Station_____ for copies of the publications offered by the Farm Reporter.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

YOUR FARM REPORTER AT WASHINGTON Friday June 12, 1931.

NOT FOR PUBLICATION

Speaking Time: 9 Minutes

FEEDING THE DAIRY COW IN SUMMER

ANNOUNCEMENT: At this time Station _____presents again Your Farm Reporter at Washington, who brings you today his weekly report to dairy farmers. He reports today on feeding dairy cows in summer. He's going to tell you what he's found out about summer feeding from a feeding expert, Mr. J. E. Dorman, of the United States Department of Agriculture. All right, Mr. Reporter.

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There's a big difference between the cow of yesterday and the cow of today.

To begin with, Mr. Dorman points out that cows in their natural state lived almost entirely on roughages. And when cows were wild they grew sleek and fat on green grass alone. But the cow of today, he reminds me, is an artificial animal. Her ancestor gave only enough milk to feed one calf, but the modern cow must give enough to feed several calves. She is expected to produce thousands of pounds of milk a year, and her milking period extends over most of the year.

This is why many dairy cows need extra feed, said Mr. Dorman--- that is, more feed than they can get on pasture alone. This is why it has become a good rule to feed heavy producers grain, even when pastures are excellent.

"Remember," he went on, "the high-producing dairy cow is one of the hardest-working animals on the farm. Can you expect her to do all this work on a diet of green grass alone?---on a diet that is largely water? You might almost as well try to pitch hay for a month with nothing to eat but spinach."

However, when we think of summer feeding most folks think first of pasture. And pasture should come first, by all means, according to Mr. Dorman.

The dairy cow is a wonder at utilizing roughage, and a good pasture is much more than half the battle in summer feeding. In fact, Mr. Dorman says that low producers will usually produce most economically on pasture alone, if the pasture is good. He follows this rule: Cows giving more than

20 pounds a day should have some grain. But it usually isn't economical to feed grain to cows producing under 20 pounds, when the pasture is good.

To illustrate how important he considers good pasture, he told me of an incident reported by two dairymen-friends of his in a Middle Western state. These dairymen lived in the same neighborhood, and they owned herds which normally produced milk and butterfat at about the same rate per cow. Last year, however, one of the herds was turned on good pasture for the summer, while the other went on pasture that was very poor. Both were given grain in about equal amounts. But the cows on good pasture produced almost twice as much as the herd on poor pasture.

Which emphasizes Mr. Dorman's main idea: That good pasture is one of the most valuable feeds in the world for dairy cows. And at the same time it is the cheapest.

"That being true," I put in, "why do we see so many poor pastures in the country?"

"I can't tell you exactly why," he replied. "All I know is, that as a general rule there are a great many poor pastures in the country. Sometimes it seems to me that the poorest land is usually reserved for pasture. I think this is a mistake. Good pasture is just as profitable for the dairy herd as any crop that can be grown."

And then, after emphasizing good soil and a good stand, Mr. Dorman took up good management.

"In the first place," he remarked, "we have to be careful to turn cows on pasture at the right time. There isn't much food value in short and watery grass, and besides, too-early grazing tends to keep the pasture short all season.

"Give a good pasture a good start," he advised, "and you've taken an important step toward keeping it good all summer."

But---of course there always comes a time in summer when pastures dry up. Even the best ones get dry and short. "What do you do, then?" I asked.

"The thing to do is to prepare for that time," was his reply. "Grow some soiling crop---sudan grass, corn, peas and oats, or some other crop which may be harvested and fed to cows green. Or you might feed silage if you have it. Most dairymen fill their silos for winter use, but many are beginning to use them for summer also. They simply make provision to have a little silage left over for the hot months. And they find it comes in pretty handy during the dry season."

"Do you recommend growing these supplemental crops as a general rule?" I inquired.

"Yes indeed," declared Mr. Dorman. "I recommend it very strongly because the time of year when pastures are dry is a critical period. In addition to dry pasture we have hot weather, and insect pests. They're all working hand in hand to bother us. They make proper feeding doubly important at this time. Unless the cow gets plenty of good feed her production is likely to fall off, and then it is pretty hard to get production back to normal again, even with proper feeding later on. Supplemental crops or silage will prevent this slump in production."

Speaking of grain again, I asked about a good grain mixture for high-producing cows on pasture.

Fairly light grain makes the most desirable mixture, Mr. Dorman told me. A mixture of bran, ground oats and a little cottonseed meal is an ideal ration, he said.

"And there's one other thing I might add," he continued. "Even when pastures are good, cows may like a little dry legume hay. It seems to be a good idea to have good legume hay available where cows can get it when they come to the barn for milking The water content of pasture is very high, and unless cows get dry feed of some kind they don't get enough solid matter. A little dry hay will often help to keep production up during hot weather."

Now, let me refer you to two bulletins of the Department of Agriculture that will answer most any question you may have about feeding in summer. One is called "Feeding Dairy Cows," and the number is Farmers' Bulletin No. 1626-F; the other is entitled "Feeding Dairy Cows in Summer," and is Leaflet No. 7-L.

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ANNOUNCEMENT: You may send requests for those bulletins to Station _____ or to the Department of Agriculture in Washington. Did you get the numbers? "Feeding Dairy Cows, " is Farmers' Bulletin No. 1626-F; and "Feeding Dairy Cows in Summer" is Leaflet No. 7-L.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON

RELEASE Monday, June 15, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 minutes.

Crops and Soils Interview No. 25:

Compares Russia and United States For Production of General Farm Crops

ANNOUNCEMENT: We've heard a great deal about the agricultural possibilities of Russia recently. To-day your farm reporter at Washington has a report for us on that subject. From the chief of the soil survey of the United States Department of Agriculture, he has brought us a comparison of the natural capacity of Russia and of the United States ------- Well, Mr. Reporter?

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You remember, some time back, Dr. Curtis F. Marbut, chief of the United States Soil Survey and recognized authority on the world's soils told us that Russia is able to produce high-grade wheat over a much larger area than we can in the United States.

In other words, Russia has the advantage over us in wheat lands. And in wheat lands adapted to the use of machinery. She has the natural capacity to raise more high-grade wheat and raise it more cheaply than we can. She can beat us in wheat.

But wheat doesn't tell the whole story.

Dr. Marbut says the countries which have developed the great civilizations of the world have been lands of varied production. Any country which has the natural capacity for varied production has an advantage in the development of complex civilization.

Varied production is not simply a matter of having people with a variety of desires or having farmers who know how to grow a variety of crops. It is a question of the country, not of men. Dr. Marbut declares that it is not true that all countries have a natural capacity for varied production. Of course, any crop will grow anywhere, provided enough attention is given to it. But the market price is determined by the cheapest production. The market price is determined by the crops grown where the least expensive care is given. The least expensive care is required where the crop fits into the natural productive capacity of the country, that is, where the natural environment is suited to it.

In speaking of natural environment Dr. Marbut includes such things as rainfall, temperature, the shape of the land, frosts, the constancy of temperature; and, most important of all, the soil itself. The soil is most important because it is really the product or result of the combined action of rainfall and temperature and the like. -------

All right, getting down to the soil itself, lets hear how the United States and Russia compare in fundamental natural capacity for varied production.

Dr. Marbut says we have about eight or nine different natural agricultural regions.

First, we have the Great Lakes region, which is chiefly a region adapted to grass and forest growing. It is not well adapted to many other crops.

Second, we have the Eastern Central United States; that region from the Atlantic Coast west to Illinois, and extending south to southern Tennessee; and including much of Virginia, Maryland, New Jersey, Pennsylvania, Ohio, Indiana, Kentucky, and Tennessee. Dr. Marbut calls that our most important region for general crop production. It is a region with a relatively long growing season. The soils are comparatively poor. Yet with careful cultivation they are capable of almost indefinite improvement. No one crop does extraordinarily well, but most any crop may be grown. The need for thorough cultivation limits the size of farms and makes it possible to support a farm population which is relatively dense compared to other regions. So this is the region better adapted to diversified agriculture than any other part of the country.

Third, we have our Cotton Belt or southeastern sandy region. It can be adjusted to growing its own vegetables; but the easiest crop to grow is cotton, and Dr. Marbut thinks it will always be a commercial agricultural region, supplemented by food crops, grown for home use.

Fourth, we have the Corn Belt on the humid, black lands of Illinois, Iowa, Minnesota, Missouri, and adjoining States. It is best adapted to corn, and will probably always be not a region of livestock raising but of livestock feeding. The Corn Belt can produce its home requirements in the form of fruits and vegetables with relative ease; but it is not so well adapted to that kind of farming as the Eastern Central region.

Then fifth, we have our Great Plains. The eastern part of it will produce wheat cheaply and of high quality. In the southern part of this region, grain sorghums take the place of wheat. The western part of the Great Plains is best adapted to grazing supplemented by wheat. Dr. Marbut expects wheat to continue to be subordinate to livestock in the western Great Plains, because wheat can not be depended upon in that region on account of lack of rainfall.

But there is a sixth region, which Dr. Marbut declares is the least known region in this country, and the most important of its kind in any part of the world. He refers to the Great Mississippi Alluvial Plain, a large area of highly fertile alluvial soils. It is not just alluvial soil such as is found in many other alluvial plains. It is potentially much more productive than alluvial lands along the Ohio, for instance, because, in general, the alluvial soils of the lower Mississippi came from the highly fertile dry regions of the West, which have never had the rich plant food leached out of them as have soils in damper climates. Dr. Marbut sees tremendous promise for the future in this region, when the inevitable readjustment of agriculture toward the more productive land takes place.

Then we have a seventh or desert region. Desert agriculture is not an important factor, except where water can be applied by irrigation. There are a few crops, like sugar beets and citrus fruits, which can be grown in this region.

Eighth, we have our Pacific Coast region which is a world in itself, in that it contains areas like all our other regions but on a smaller scale.

Now let's hear how Russia compares with this country in natural capacity for varied production. If you call our country complex in its soils, Russia is very simple. Where we have eight regions she has only three or four.

First, all the northern part of European Russia down as far south as Moscow, Dr. Marbut says, is comparable to our Great Lakes region. It is rye and grass and small fruit country, which is naturally adapted to development of dairying as its big industry.

Second, Russia has her great central grass lands -- the greatest extent of wheat lands in the world -- but essentially a one-crop region. It can produce wheat more cheaply than the United States and produce it in tremendous quantities, but can not cheaply produce a variety of other crops.

Third, Russia has a great desert region, comparable to our own desert region, which can be utilized only by irrigation, and is not important in world agriculture.

Then, fourth and last, Russia has her Caucasus-Black Sea region and the mountain land of southern Russia comparable to our mountain region of the Pacific Northwest.

In parts of this region, the soils are naturally adapted to the growing of a wide variety of crops, but such varied areas are small, and their entire production of various crops, Dr. Marbut figures, will all be required to feed the tremendous population of Russia itself, thus limiting the agricultural exports of the Russians very largely to the one commodity of wheat.

This material will be published in more detail in the September number of the GEOGRAPHICAL REVIEW, the magazine published by the AMERICAN GEOGRAPHICAL SOCIETY.

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ANNOUNCEMENT: You have just heard how Russia and the United States compare in natural capacity to produce general farm crops, as outlined by Dr. Curtis F. Marbut, chief of the United States Soil Survey. Station_____presents this report in cooperation with the United States Department of Agriculture.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

YOUR FARM REPORTER AT WASHINGTON. Wednesday, June 17, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes. All Regions.

CARE OF GROWING CHICKS

OPENING ANNOUNCEMENT: Ladies and gentlemen, Your Farm Reporter at Washington has just had an interview with Mr. A. R. Lee, poultry specialist of the United States Bureau of Animal Industry about the CARE OF GROWING CHICKS. That's a very timely subject for this season of the year and Station _____ is pleased to present Your Washington Farm Reporter.

---ooOoo---

Well folks, according to my calendar this is ths seventeenth of June and it won't be long now until many of us will be tasting fried chicken for the first time this season. Nearly every time I think of tasting something I'm reminded of the story of Mark Twain. It is said that Mark Twain refused to play golf himself, but that he once consented to watch a friend play. The friend happened to be a poor player. Teeing off, he sent clouds of earth flying in all directions. Then, to hide his confusion, he said to his guest:

"What do you think of our golf course, Mr. Clemens?"

"Best I ever tasted," said Mark Twain, as he wiped the dirt from his lips with his handkerchief.

Now folks, it won't be long until your friends and guests will be complimenting you on your fried chicken. If you want them to be as complimentary as Mark Twain and say it's the best they ever tasted----take care of the growing chicks. At least that's the prescription of Mr. A. R. Lee, poultry specialist of the United States Bureau of Animal Industry. I asked Mr. Lee the other day to tell me something about the care of growing chicks at this time of year.

"Well," he said, "crowding is a problem that must be given careful attention at this season. It's especially important now because the chicks are growing so rapidly. As they grow they require more room, and for that reason they should be removed from crowded brooder coops, reduced in numbers, and placed in roomy growing houses or on a range."

Of course, there is some crowding in the regular brooder houses at this season of the year, but it is not such a problem as it is in small brooder coops where chicks are brooded by natural methods. I asked Mr. Lee

about culling chicks at this season, and he replied:

"Culling is one of the best ways to avoid crowding at this time of year. Cull out the small and runty chicks. They are no good anyway, and apt to spread disease through the flock."

"What about getting rid of the young cockerels at this time," I questioned.

"A splendid idea," he replied. "They can be separated from the pullets by the time they are 8 or 10 weeks old, by which time they are nearly large enough to be sold for broilers. If they are to be kept for friers, place them by themselves, and feed them a few weeks longer----until they are large enough to satisfy a person with a reasonable capacity for fried chicken."

According to Mr. Lee it's a good policy to get young chicks acquainted with the roost poles early in life. At first small, low roosts should have been used around the brooder, but now as the chicks are larger they can use higher roosts. This gets the chicks up off the floor, prevents crowding, especially in corners, and permits better ventilation in the house. Ventilation, you know, is mighty important, especially in hot weather.

I asked Mr. Lee about new wrinkles in the care of growing chicks.

"There's one," he replied. "It's the light, range shelter, and is a real improvement in the raising of good chicks. This light, range shelter consists of a low, A-shaped-roof coop with wire sides. It is filled with roosts, and provides perfect ventilation for growing chicks during hot weather."

According to Mr. Lee this range shelter is about nine feet wide by fifteen feet long and the roof is about five feet high in the center and slopes down to about three feet at the edges. This shelter will accommodate about 150 growing pullets until they are ready for the laying house. The shelter should be equipped with wire floors to prevent the chicks from picking up droppings. It may be a good plan to build a wood floor under the wire so that the droppings can be cleaned out often and removed from the range.

The whole outfit is light and can be moved to clean ground when desired. Mr. Lee says that these range shelters are being used extensively in sections where chicks are started in battery brooders and later moved to a range after the artificial heat period is over. If you are interested in one of these new range shelters, you may be able to get plans of the type best suited for your section of the country from your own State college of agriculture.

Mr. Lee cautioned that growing chicks using colony brooder houses at this season, need all the ventilation it's possible to give them. That means opening up all doors and windows.

"Growing chicks," says Mr. Lee, "thrive on a good range, but, he cautions "it must be CLEAN, free from disease infection, free from droppings, and preferably in good grass."

Late-hatched chicks often follow early hatched chicks on a range. In that case the early chicks eat up most of the green stuff, infect the ground to some extent, and leave an undesirable range for the little fellows that came out of the shells a few weeks later. That's one reason late-hatched chicks never do so well as the early hatched ones. They don't have as good a chance. Give them a chance---plenty of feed, a good clean range, and good management, and they'll show you what they can do.

"Mr. Lee," I questioned, "do growing chicks really need shade during this season of the year?"

"Yes, they do," he replied, "especially on warm days. Of course, natural shade is best, but artificial shade can be used if there is no natural shade available. Just something to protect the chicks from the direct rays of the sun during the hot part of the day."

I next asked about feeding at this time of year.

"It's important," Mr. Lee said. "At this time of year growing chicks are usually fed scratch grain in addition to their growing mash. They may be fed one part of scratch grain to nine parts of mash by the time they are four weeks old, and the scratch grain gradually increased until the chicks are receiving equal parts of mash and scratch grain by the time they are ten weeks old."

The usual way of feeding growing chicks at this season of the year is, a light feed of grain in the morning followed by a full, grain feed at night. This of course is in addition to a growing mash which should be available in a hopper at all times.

Clean feed is important in the production of young chicks. The use of suitable hoppers aids in solving this part of the chick-growing problem. Feed hoppers with reels on top of them help to keep the feed clean. There are other things that help in the production of GOOD chicks. Many of these are discussed in the newly revised Farmers' Bulletin No. 1541-F, called FEEDING CHICKENS, and in Farmers' Bulletin No. 1554-F, called POULTRY HOUSES AND FIXTURES. You are welcome to copies of these two bulletins. Send your request to Station _____ in _____. The same request will bring you a copy of this talk if you want it. Ask for the FARM REPORTER OF JUNE 17, 1931.

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CLOSING ANNOUNCEMENT: Ladies and gentlemen, you have been listening to Your Washington Farm Reporter in one of the regular POULTRY programs broadcast from Station _____ in cooperation with the United States Department of Agriculture. He mentioned Farmers' Bulletin No. 1541-F, FEEDING CHICKENS, and Farmers' Bulletin No. 1554-F, POULTRY HOUSES AND FIXTURES, and the FARM REPORTER OF JUNE 17, 1931. You may have free copies of all these publications by addressing your request to this station or by writing directly to the United States Department of Agriculture in Washington, D. C.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

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YOUR FARM REPORTER AT WASHINGTON. Friday, June 19, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 minutes All Regions.

HOGGING DOWN SUMMER CROPS

OPENING ANNOUNCEMENT: Ladies and gentlemen, in cooperation with the United States Department of Agriculture Station _____broadcasts a weekly LIVESTOCK program by Your Washington Farm Reporter. The subject for this particular occasion is HOGGING DOWN SUMMER CROPS.

---ooOoo---

As I was boarding a train in Washington the other day I met Dr. C. D. Lowe, extension animal husbandman for the United States Bureau of Animal Industry. One of Dr. Lowe's jobs is to cooperate with the agricultural extension people in the 48 States on teaching new ways of growing, feeding, fattening, and marketing of general farm livestock. It happened that we were both going in the same direction for a short distance, so we sat down together and talked about LIVESTOCK as the train rolled on down through the historic old State of Virginia.

Dr. Lowe's work keeps him on the go most of the time and in his travels around over the country he gathers a lot of first-hand information on the livestock situation. For instance, he told me that day on the train that hog raisers in many sections of the country sometimes find it to their advantage to hog down summer crops, under certain conditions.

Farmers in this country have been hogging down such crops as corn, cowpeas, and soybeans during the fall season for a number of years, and know the advantages and disadvantages of harvesting such crops in this manner. However, the idea of hogging down SUMMER CROPS struck me as being something with a new edge, so I asked for further information.

"Well," said Dr. Lowe, as he pulled an extension report from his inside coat pocket, "I'll give you the figures on the business of a diversified farmer in the central part of the country who hogged down a wheat crop in 1930."

Perhaps I should explain that in this particular case the wheat was seeded with clover, and by the time the wheat was ripe enough to hog down there was some clover to graze also.

On May 31, 1930, this farmer turned a number of hogs on to the 27-acre field of wheat that had been seeded with clover. The wheat was in the stiff-dough stage, and pasturing conditions were ideal. All told, there were 90 head of hogs pastured on this 27-acre field of wheat. Thirty-six of these animals were pigs averaging about 30 pounds each, 50 were shotes averaging about 81 pounds, and 4 were sows averaging about 150 pounds. In other words, the 90 head of hogs weighed 5,730 pounds on the morning of May 31, the date they went on to the wheat field.

On June 21, or exactly three weeks after the hogs had been turned onto the wheat field, they were weighed and sold. Remember that they weighed 5,730 pounds when they went onto the field----but three weeks later the same 90 hogs weighed 8,302 pounds. In other words, they gained 2,572 pounds in three weeks while hogging down a field of wheat containing a small amount of clover.

The extension report stated further that the hogs were sold on the farm at $9 per hundred weight. In other words, the hogs made a gross profit of $231.49 while running on the wheat. I say gross profit because the pigs ate 10.8 bushels of corn valued at $1.00 a bushel, in addition to the wheat. The other hogs had nothing but the wheat and clover. That leaves a net profit for the 27 acres of wheat and clover of $220.68.

Turning to Dr. Lowe I said, "These figures sound all right, but how do I know that the farmer made more money by hogging down the wheat than he would have made had he harvested and marketed it in the usual way?"

Pointing to a footnote which I had overlooked at the bottom of the paper Dr. Lowe said, "There's the answer to that question."

According to the footnote this same 27-acre field had been in wheat in 1928 and yielded 131 bushels. The farmer thought that the hogged-down crop was about equal to the 131-bushel crop two years before and figuring on that basis he received a net return of $1.68 for each bushel of wheat hogged down in the field. He also saved the labor of harvesting and threshing at one of the busiest periods of the year.

According to the farm management division of the Bureau of Agricultural Economics about one-third of the cost of producing a bushel of wheat is in harvesting, threshing, and marketing. Now, if a farmer can save this amount by allowing hogs to do the harvesting-----should he follow that system?

Well, according to Dr. Lowe, that's a question that every individual farmer will have to work out for himself, taking into consideration the size of crop, probable cost of harvesting and other factors. It might be profitable to hog down wheat, clover, alfalfa, or even other summer crops one year, and not quite so profitable another year. Let's take present conditions.

The majority of you listeners know the wheat outlook as well as I do. You know that we have plenty of wheat on hand and the prospects of a good crop in the making. Now---if you are producing wheat to make bread for your family to eat, it's questionable whether hogging down would be advisable. On the

other hand, if you figure wheat as a cash crop, and the prospect of getting much cash for it is not very bright, and you have hogs to feed and fatten--- it might pay you to hog off a part of the crop this summer.

Before deciding to hog down wheat, however, stop and ask yourself these three questions: What is the wheat outlook this year? What is the July hog outlook? Have I sufficient feed to fatten my hogs without using the wheat?

Of course, the answers to these questions will not solve the problem, but they will give you a better understanding of the whole matter, and perhaps enable you to make the soundest decision.

I'm talking about hogging down summer crops today because this is the 19th of June, and about time to begin hogging down operations in many sections of the country. I have used wheat because Dr. Lowe gave me that example and experience of the farmer who received $1.68 a bushel for wheat, hogged down in the field, and because wheat is probably grown in more States than any other one crop. However, in many instances it may be just as profitable to hog down a summer crop of clover, of alfalfa, or of some other summer legume, as a crop of wheat.

Whether to hog down a crop in the middle of the summer, or whether to let it mature and be harvested in the usual manner, is a question that needs straight thinking. It's a question of farm management, and the farmer who works it out according to his own individual conditions of feed, hogs, crop rotation, outlook, and so forth, is the farmer who will doubtless make the most out of the operation.

Some farmers make more money than others by hogging down crops because they follow a regular program. Sometimes it's more profitable to hog down crops than to harvest them in the usual manner, and sometimes it's just the other way around. That's why hogging down crops, especially summer crops, is a management problem, and that's why it needs careful consideration.

If you have the 1931 Outlook Reports, study the hog outlook, and then the wheat outlook, and the corn outlook, and after that discuss the matter of hogging down summer crops with your county agent or with extension specialists at your own State college of agriculture.

Remember that you make the most money from a crop when you market it in the most profitable manner. If that calls for hogging down certain crops, at certain times, in certain years, then do it. If it calls for hogging down certain crops this summer-----make sure that you are right, and then go ahead.

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CLOSING ANNOUNCEMENT: This closes the Farm Reporter program broadcast from Station _____in cooperation with the United States Department of Agriculture. You may have a copy of the 1931 OUTLOOK REPORT by addressing your request to this station.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. RELEASE, Monday, June 22, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes

Sweet Uses of Adversity.

Crops and Soils Interview No. 24:

ANNOUNCEMENT: Your farm reporter at Washington has been talking with specialists of the United States Department of Agriculture about some of the recent developments in the use and breeding and selection of plants. Well, Mr. Reporter, let's have your report---We like to keep up with what is going on, at the front, as it were -----

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As you know, a lot of livestock is killed by eating poisonous plants.

Any of you who have lost animals that way probably think of poison weeds as much worse than useless.

However, Dr. W. W. Skinner, assistant chief of the chemical and technological research unit of the Bureau of Chemistry and Soils, says there is a possibility that, instead of causing losses, some of our poisonous plants might be used to increase crop returns to the farmer. They may be used to kill insects instead of cattle.

Experts of the Bureau of Chemistry and Soils are now investigating poisonous plants in the hopes of discovering an insecticide that will be cheap, and deadly to insects, but harmless to vegetation, and which will not leave a toxic spray residue.

You know, nicotine is one of our most valuable insecticides. We get it from tobacco. The midribs of the tobacco leaves and the leaf scrap, and damaged leaves, and the refuse from cigar manufacture supply the raw material for nicotine insecticides. But there is usually very little nicotine in that tobacco scrap, and it costs a good deal to get it out, so producers of nicotine don't pay much for the raw material.

Another plant we now use considerably for insecticides is pyrethrum. It is effective against many insects, doesn't hurt foliage, and is not poisonous to man or animals, but it is high in price, and the supply comes mostly from Japan and Europe.

Other less valuable plants used as insecticides include hellebore, sabadilla, and larkspur. As yet, however, Dr. Skinner says, surprisingly few of our poison plants have been used commercially to kill insects.

Insects take, on the average, about $100 out of every $1,000 worth of crop value. Of course, in some cases, some folks lose a much bigger proportion than that. There is urgent need for better and cheaper insecticides to cut down these losses. That is the reason these chemists are now studying many plants which produce poison compounds in the hope of finding one or more insecticidal plants which may be grown as a field crop in a temperate climate such as we have in this country.

They are also working with tropical plants which may give us an ideal insecticide, and at the same time provide another field crop for the Virgin Islands, and Porto Rico, and the Philippines where more diversified agriculture is needed.

Well, sir, if they can make poison weeds add money to the farmers' pockets, I guess we will all have to agree with the poet that there is "good in everything." And it seems that our plant breeders have squeezed some good even out of last year's drought.

Naturally, the drought hit the experimental work of the Bureau pretty hard. But it wasn't all loss. Some strains of corn didn't do so well at the experiment farms in the drought sections, but other strains came through the heat and lack of moisture with tassels flying. In other words, they stood the test for drought resistance.

For instance, one strain of corn known familiarly to the corn breeders as Dark Green Lancaster was grown in experiments at Ames, Iowa, Bloomington, Illinois, and Rosslyn, Virginia. In all three places there was a shortage of rainfall, and temperatures during July and August were well over 100 day after day.

Of course, it is a pleasant sight to see corn plants stay dark green in spite of heat and drought, as this one did. But I guess you practical corn growers are more interested in the final yields. Well, the Dark Green Lancaster crosses were 43 per cent better than Krug, which was the best yielding of the 12 commercial varieties in the experiment at Ames. Dark Green Lancaster crosses produced 16 bushels more to the acre than Krug. In other words, heat and drought resistance as shown by lack of leaf and tassel burning was also reflected in ability to produce corn.

But every year is not a drought year. How will these crosses produce in an ordinary year? Well, it happens that similar experiments have been going on for a number of years, during which Dark Green Lancaster crosses have been compared in yield with commercial varieties. In each year, they were significantly more productive than the best commercial varieties.

This just shows the possibilities of breeding corn for resistance in drought and heat, such as we had last year. Similar methods apply, and are being used, by corn breeders today to meet other conditions.

Breeding, however, is not the only thing we have to take into consideration in growing corn. Let's take the resistance of corn to cold and frost, for example.

Corn plants are more resistant to cold when grown in more productive soil.

An intelligent soil-improvement program to increase the productive capacity of the soil helps cut down the danger of loss to corn crops from untimely frosts.

The growing of legumes; and, where it is needed, the application of fertilizer in proper amounts, not only increase the productive capacity of the soil, but improve the yield and quality of the corn because of the longer growing season.

Field studies on cold damage both spring and fall have been conducted for the last three years at Bloomington, Illinois. Portable field refrigerators were used in those experiments to produce chilling temperatures and frosts.

Plants growing in soil to which fertilizers had been applied were more resistant to the cold than the plants of the same strain growing in the untreated soil.

In the middle of September, a cold-resistant strain of corn was subjected to a temperature of 26 to 27 degrees for two hours. Half of the plants were growing on fertilized soil and half on untreated soil nearby.

Well, sir, the plants on the fertilized soil showed no sign of damage, while those on the unfertilized were frosted. When the corn was harvested it was found that the ears from the frosted plants on the less productive soil had not increased in weight after the plants were subjected to the freezing temperatures. On the other hand, those from the frosted plants on the more productive soil had increased in weight and were almost as heavy as ears from plants of the same strain which had not been exposed to the cold.

Many other characters besides yield, drought resistance and cold resistance must be combined to produce a satisfactory strain of corn for practical purposes. This requires time for its accomplishment. The important point at present is that apparent drought resistance has been found in self-fertilized strains of corn which may be expected to breed true and thereby provide a hereditary source for this characteristic for use in future breeding operations.

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ANNOUNCEMENT: Your farm reporter at Washington has just reported some of the recent development in plant investigation by specialists of the United States Department of Agriculture. This report is presented by Station -----in cooperation with the Department.

UNITED STATES DEPARTMENT OF AGRICULTURE — Radio Service — OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. Wednesday, June 24, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes. All Regions.

A TRIP TO UNCLE SAM'S POULTRY FARM AT BELTSVILLE, MARYLAND.

OPENING ANNOUNCEMENT: Ladies and gentlemen, Your Washington Farm Reporter made a trip to Uncle Sam's big poultry farm at Beltsville, Maryland, the other day. If you can spare the next ten minutes, listen to the Reporter tell about some of the things he saw at this great poultry laboratory. All right, Mr. Reporter.

--ooOoo--

As I was walking along Virginia Avenue, in the nation's capitol, over near the agricultural building the other day, a big car pulled over to the curbstone and a familiar voice asked----"Do you want to go for a ride?" Now I'm not hankering to go for just any kind of a "ride," but when I found the driver to be Mr. A. R. Lee, my poultry friend in the United States Bureau of Animal Industry, my fears of being put on the "spot" vanished, and I climbed in for a ride which wound up at Uncle Sam's big farm at Beltsville, Maryland.

This 1,500-acre farm belongs to the United States Department of Agriculture and is under the supervision of the Bureau of Animal Industry, and the Bureau of Dairy Industry. It's about 15 miles from down-town Washington and located just off the 40-foot boulevard leading to Baltimore.

Naturally I saw a lot of interesting things on this trip to the Government farm at Beltsville, but I can only tell you about ONE of them in a single ten-minute talk, so for to-day, I'll talk about POULTRY.

The poultry farm proper consists of 65 acres. Most of this is slightly rolling and fairly well drained. There are plenty of trees which give good shade and there is plenty of bluegrass on the natural range. Everything is laid out with an eye to convenience and sanitary precautions are practiced at every turn. All in all, it looks about like any other modern, well-kept experiment station.

Our official tour started in the incubator room which is located in the basement of a laboratory building. I saw four modern, forced-draft electric incubators in operation. I was told that these four incubators contained a total of 12,000 eggs, but I didn't have time to count them all so I just took Mr. Lee's word for the number. Every egg that goes into these experiment-station incubators is from a trap-nested hen. That's not all. All eggs are hatched in separate wire baskets so that pedigree records of all chicks can be kept.

As I passed out of the incubator room I saw an electrical arrangement used for changing the position of the eggs every 15 minutes during the hatch, but was unable to learn whether or not it is practical because the experiment had just begun.

We next visited the office of Dr. T. C. Byerly, in charge of hatchability investigations. He said that they hatched about 10,000 chicks a year at the farm just for hatchability experiments and a grand total of over 20,000 chicks a year for all experiments. According to Dr. Byerly's investigations the diet of a hen affects the constitution of her eggs and that affects hatchability. For instance, he said that single protein supplements that have been subjected to a high temperature, and proteins of a vegetable origin such as cottonseed meal, and soybean meal, when making up 20 per cent of the ration, generally cause high embryo mortality during the second week of the hatch.

Naturally you expect to throw out some dead germs at the first candling, and maybe two or three per cent of those remaining at the second candling. However, when it becomes necessary to throw out from 15 to 25 per cent of dead germs at the second candling, there's something wrong, and, according to Dr. Byerly, it's often traceable to the diet of the hens that produced the eggs.

Then there are inherited defects. These also affect hatchability. According to Dr. Byerly much of the variation in hatchability is due to inherited defects. Good, as well as poor hatchability, is inherited. For instance, 70 per cent of a hen's fertile eggs must hatch before she is admitted to the breeding pens at Beltsville. I could have listened to Dr. Byerly for hours but Mr. Lee said we had to be moving, and having been a soldier at one time in my life, I obeyed orders by moving on.

The next person we met was Mr. H. W. Titus, in charge of poultry nutrition work at the Beltsville farm. Mr. Titus came from Wyoming and took up his work with Uncle Sam's poultry farm more than five years ago. His job is to feed chickens on different feeds and then note the results. He feeds about 750 hens and pullets a year in his experiments with adult birds. He feeds three or four times this number of chicks of different ages in his experiments with the younger chickens.

In one experiment with adult birds, Mr. Titus is trying to find out if it's possible for a hen to transfer the vitamin B that she eats in food to the egg that she lays. Well, so far, they have been unable to get the vitamin B transferred from the food to the egg. For instance, in this experiment, hens received a diet of hominy and meat scrap supplemented with . 15 per cent of yeast but their eggs contained less vitamin B than when they received a normal ration without yeast.

In an experiment with laying hens, Mr. Titus compared the feeding value of corn and barley. This experiment showed corn to be only slightly superior to barley for birds on range.

In an experiment comparing the use of ultra-violet light with cod-liver oil on confined birds, the cod-liver oil proved to be the more satisfactory both from the standpoint of egg production and of cost.

The results of another experiment show that a mixed diet of animal and vegetable proteins not only give a larger egg yield than a single protein diet, but that the eggs are larger.

In his feeding experiments with young chickens, Mr. Titus is making a study of yellow corn as the chief constituent in the diet. In another young chick experiment he's trying to find out the causes of deforming leg weakness, and in still another experiment he's trying to find a suitable diet for chicks in a battery brooder. Still another experiment is being run to try to find a suitable ration for fattening poultry. I might add in this connection that a new three-story building is being erected for this fattening work. It's modern in every respect and will doubtless aid the scientists a great deal in their work.

Mr. Lee's next move took us to the laying houses where some of Uncle Sam's record layers are housed. The White Leghorns, Rhode Island Reds, and Barred Plymouth Rocks seem to be the predominating breeds at the Beltsville farm, but I saw a few pens of several other breeds. I believe Mr. Lee said that they had about 3,000 adult birds on the farm now.

As we started to leave the farm we met Dr. M. A. Jull who is in general charge of the work described and also the head of the Poultry Office of the Bureau of Animal Industry. Dr. Jull has been supervising the work at the poultry farm for eight years and the results testify to his ability as a practical scientific executive. He lives on the farm, and in addition to supervising general work, takes a special interest in the breeding activities. For instance, he told me that as inbreeding is increased, hatchability decreases. And that by careful breeding, they have been able to produce Rhode Island Reds at the Beltsville farm that produce as many eggs per bird as the well-known White Leghorns. Rhode Island Red hens in the Beltsville breeding flock last year averaged 246 eggs per hen, while the Leghorns had an average of 237 eggs per hen. No hen was allowed in the breeding pen in 1930 unless she had a record of at least 225 eggs. That's one reason why the Beltsville hens are such good layers. They are bred for laying, from laying strains.

I expected to tell you about Mr. Haynes and his 15 years' experience in raising chickens on range, but the gong has sounded and I'll have to save that for another week.

If you want a copy of this talk ask for the WASHINGTON FARM REPORTER OF JUNE 24, 1931.

CLOSING ANNOUNCEMENT: Ladies and gentlemen, you have been listening to one of Your Washington Farm Reporter programs broadcast from Station_____ in cooperation with the Federal Department of Agriculture. Write this station or the United States Department of Agriculture in Washington, D.C., if you want a copy of the WASHINGTON FARM REPORTER OF JUNE 24, 1931.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

YOUR FARM REPORTER AT WASHINGTON. Friday, June 26, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes. All Regions.

MILK PRODUCTION TRENDS IN THE UNITED STATES.

OPENING ANNOUNCEMENT: Ladies and gentlemen, Your Washington Farm Reporter has something rather new for us today on the subject of MILK PRODUCTION TRENDS IN THE UNITED STATES. The subject sounds both interesting and timely so I'll pass over the "mike" and let the Reporter report.

--oOo--

Well folks, I want to talk to you for a little while today about getting on the right side of the fence so you can watch the general trends of milk production in this country. When I think of getting on the right side of anything I'm reminded of the story of the lady who was crossing the Atlantic. Rushing up to the captain one day she exclaimed, "Oh, Captain, which side of the ship should I stand on to see a whale?"

Now when it comes to watching milk production trends in this country it doesn't matter which side of the fence you are on so long as you are able to see the situation and be governed accordingly. At least, that's what I judge from a talk I've just had with Mr. John B. Shepard of the Crop and Livestock Estimates division of the United States Bureau of Agricultural Economics.

There is so much interest in milk production trends that Mr. Shepard has been assigned to prepare a monthly report on this subject. This report is a summary of facts sent to the Department of Agriculture by 20,000 crop correspondents and special dairy reporters. It contains a lot of information that should be of value and interest to every soldier of the milkbucket because it summarizes the dairy outlook in clear, brief, readable style.

The first report appeared on April 14 of this year. The next was out on May 23, and the newest is dated June 18, just a few days ago.

Now----let me give you a few high lights from these monthly milk trend reports. The April report said, "The number of milk cows," not calves, mind you, "is still increasing. Probably two and a half per cent above the number of milk cows in April 1930."

The May report said, "The number of milk cows is apparently still increasing, but the RATE of increase has begun to slacken." The May report continues by saying that the number of milk cows in May, 1931, was nearly three per cent above the number in May 1930.

The majority of you listening dairymen understand why the number of milk cows is still increasing. It's the result of the large number of heifers coming into production and few cows being culled from the herds. The bright spot in that part of the report is the fact that the RATE of increase has begun to slacken.

Now let's bring the milk production trends up to date by turning to the June report.

A spring drought reaching from Michigan to California, and including Wisconsin, Minnesota, Iowa, the Dakotas, Montana, and Eastern Washington and Oregon looms now as one of the most important factors in the dairy situation. In fact it's so important that production and prices may swing up or down from present levels depending on the amount of rain that this dry area receives during the next month or so.

Of course, it's impossible to make any predictions of the final effects of this regional drought, but remember that approximately ONE-THIRD of the milk cows of the country are in this affected area where pastures are poor and hay crops rather seriously hurt.

But let's not dwell on that local matter too long because a few good rains at this season can work wonders on a pasture and change it from a brown desert to a green carpet. The Northwestern drought is just one of the signal beacons on the present horizon of the dairy industry, and it may grow larger or it may disappear, depending on the whims of Old Man Weather.

The price situation is always a beacon on the horizon of any industry, and it's the beacon that so many ships sail by in the dairy business. Let's look at it.

The June report says that dairy prices have been changing so rapidly that no one knows where they are going. Every dairyman knows where they are now -----lower in some areas than they have been since the war. For example, between the middle of April and the middle of May the average price which farmers received for cream dropped from 26 cents per pound of butterfat to a little over 21 cents-----a decline of 20 per cent in one month, coming when a lot of people thought prices were already at the bottom. Now the question is, WHERE IS THE BOTTOM?

You might add that Mr. Shepard says that farmers along the western edge of the Corn Belt and from there south into Texas, where prices are lowest, have been getting only about 12 cents for the amount of cream necessary to make a pound of butter. That may console dairymen elsewhere who are getting a quarter a pound for butterfat -- to say nothing about those enjoying the privilege of selling to good whole milk markets.

Now let me turn the canvas around and show you a picture with perhaps a little brighter color. According to the monthly reports of 20,000 crop correspondents scattered throughout the country, on the first day of May, 1931, cows were producing almost as much milk each as they were at that time

last year. However, during May there was a sharp drop in the prices of dairy products, the quantity of grain fed was reduced by about half, and pastures in many sections failed to make their usual seasonal growth----with the result that on June first, 1931, cows were producing 3 per cent LESS milk PER COW than on that date last year.

In other words, when prices of dairy products go below a certain line---many dairymen apparently cut down on the amount of grain or even stop feeding it. Whether or not that happened this year, I can't say, but wholesale prices of bran at Minneapolis dropped from $20 a ton in the middle of April to $11 a ton in the first week of June---- a decline of 45 per cent in 7 weeks, without any material change in the price of wheat. With the harvest season around the corner, and the demand for feed grains weak, the fall prices of feed grains and mixed feeds are likely to be low enough to encourage dairymen to feed about the usual quantities.

Summarizing, the trend of milk production during the next three months depends largely on the condition of pastures, and on the relative prices of dairy feeds and dairy products. The present pasture outlook is poor, but even at that they'll probably surpass last year's unusually poor pastures. Prices of dairy products are expected to continue low, but feed prices are expected to be in the same class.

With three per cent more cows this summer than we had last summer milk production during the summer months of 1931 may be heavier than it was last summer.

Now, if you want to get the greatest amount of good from the monthly milk trend reports, write to the United States Bureau of Agricultural Economics, Washington, D.C. The Bureau will ask you to fill out blanks to furnish them with monthly reports of dairy conditions on your farm. By comparing the dairy situation from month to month as you will be able to do from these reports, you will be able to tell, at least to some degree, which side of the fence is best for your business.

CLOSING ANNOUNCEMENT: This, ladies and gentlemen, closes the Washington Farm Reporter program broadcast from Station____in cooperation with the United States Department of Agriculture.

UNITED STATES DEPARTMENT OF AGRICULTURE

Radio Service

OFFICE OF INFORMATION

YOUR FARM REPORTER AT WASHINGTON. Monday, June 29, 1931.

NOT FOR PUBLICATION

Speaking Time: 10 Minutes.

Crops and Soils Interview No. 25:

ANNOUNCEMENT: Your farm reporter at Washington has found out about some of the recent work being carried on by specialists of the United States Department of Agriculture. Now he is going to tell the rest of us about the results of some of the investigations in tomatoes, and sugar beets, and citrus fruits--- Well, Mr. Reporter?---

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Investigations to determine the best conditions for the ripening of locally grown green tomatoes have been carried on for several years by the United States Department of Agriculture.

Mr. R. C. Wright, of the Bureau of Plant Industry, who has been engaged in that work, says that local gardeners who try to supply ripe tomatoes for the market after frost has killed the vines, to compete in any degree with shipped tomatoes, need to be careful how they handle and store them.

If you want to ripen marketable quantities of high-class tomatoes after frost, he suggests that you set the plants in the field late enough so they will come into full bearing at about the average time for the first frost.

Near Washington, D. C., where he ran his experiments, he set his plants in the field the first or second week in July. The plants were at their best and were loaded with a good crop of mature or almost mature, green, and some ripe tomatoes by early October when the first frost can be expected.

Of course, if there are any good quality tomatoes left from the mid-season crop, use them too.

Mr. Wright doubts whether any tomatoes should be left on the plants after the first frost, even though part of the leaves may still be uninjured. There is some indication that tomatoes left on lose their keeping quality, to say nothing of the danger from a second and heavier frost.

For ripening purposes, he suggests only sound tomatoes that are mature or nearly mature. And those should be handled with care to avoid bruising.

But size is no sure indication of maturity. Medium sized tomatoes may be more mature and color up sooner than some of the big ones. Select those showing a yellowish-white color about the blossom ends or sides in contrast to the immature ones of solid green color.

Now about ripening. Mr. Wright says if you want them to ripen fast a temperature of about 70 degrees with a humidity of 75 to 80 per cent is best. But they will break down quickly after ripening. If you want moderately fast ripening, with which may be expected a comparatively slow development of decay, you can get it at a temperature of about 60 degrees.

When you have a lot of tomatoes to ripen and market, you don't want them all to ripen fast. You want to hold part of them back so as to extend the marketing period. Mr. Wright says his investigations show that 55 degrees is about the lowest temperature at which ripening will take place satisfactorily. At 55 tomatoes will ripen slowly but with good color and quality and will keep in good sound condition longer than at a temperature above or below that point.

Usually, a clean well-ventilated cellar, provided it is not too damp, makes a good ripening or storage space, because the temperature is even and there is enough humidity to prevent shriveling or wilting. Mr. Wright says an ideal arrangement for ripening tomatoes would be to have two rooms, one kept uniformly cool but not lower than 55 degrees and the other at about 70. The cool room would be considered a storage space from which tomatoes could be transferred to the warm room for fast ripening as needed. Ripening or storage rooms should be kept clean and sanitary and all decayed fruits should be entirely removed at frequent inspections otherwise decay organisms will accumulate and cause undue loss. With such an arrangement, he claims, it should be possible to extend the marketing season a month or six weeks after frost.

Mr. Wright warns local growers, however, that at about the time frost has destroyed most of the local field crop, shipped tomatoes, carefully and attractively wrapped begin to appear on the market. To compete with those, you need to grade your stock uniformly according to quality and size and pack in 4-quart baskets------- But there is a Farmers' Bulletin on "Preparation of Fresh Tomatoes for Market." That bulletin, Farmers' Bulletin No. 1291, shows some of the handling practices that have proved successful in commercial operations, also some that have been prolific sources of loss.

Now let me report to you on another line of investigation by the Bureau of Plant Industry. That is, on the work being done to develop sugar beets which will be resistant to leaf spot and curly top diseases, now threatening the very existence of our beet industry.

Dr. G. H. Coons, of the Bureau's Division of Sugar Plant Investigations, tells me the situation with respect to improvement in the quality of sugar-beet seed for American use is very promising. It looks as if we may get a solution for the serious beet diseases.

With that in view, seed of wild beets from the sea coast of Europe has been tested under leaf-spot and curly-top conditions.

The investigators failed to find any wild beet which was immune to leaf spot or to curly top. But they did find some individual wild beets with as high a percentage of sugar as our sugar beets which were more resistant to leaf spot than any sugar beet yet found. Also some exceedingly resistant to curly top have been obtained.

Wild beets cross readily with sugar beets, and the highly resistant individuals have been crossed with high-grade non-resistant commercial beets. From these crosses, beets have been obtained which show the good qualities of both parents. That is, they are much better beets than the wild beets, and much more resistant to disease than the commercial sugar beets now grown.

The selection and breeding is being continued, and the prospects of getting a satisfactory type of beet seem good. That will be another chapter in the scientific romance of sugar beet development. A century ago, sugar beets were cultivated merely for feeding cattle. By scientific methods, since then, the percentage of sugar in a sugar beet has been doubled, the quality and yield increased, and a great sugar industry built up by this application of science to agriculture.

Speaking of scientific methods of fighting crop troubles, Dr. S. B. Fracker, domestic plant quarantine administrator, tells of a novel plan for stopping the Mexican fruit fly invasion along the lower Rio Grande.

The Mexican fruit fly was first discovered southwest of Mexico City 70 years ago. Since then it has gradually spread northward in Mexico, attacking nearly all citrus fruits, as well as such other fruits as peaches, plums, pears, apples, and apricots, besides various tropical fruits.

A few years ago it reached the Texas border, and crossed. The prosperity of the expanding grapefruit groves of the Rio Grande was not only threatened, but there was danger of the spread of this insect pest to other citrus-growing districts, where it might cause untold damage.

As you all know, one of the ways used to fight many insects is by crop diversification, to break the life cycle of the insects by providing crops on which they do not live.

But that is just the reverse of what is being done in the Rio Grande Valley, Although Mexican fruit flies prefer oranges and grapefruits, the plan is to confine fruit production in the Lower Rio Grande to those fruits.

The idea is that oranges and grapefruit ripen during the fall and winter and when the late spring crop is removed from the trees, there is no fruit on which the pest can breed during the spring and summer. If the growers pick the spring crop of citrus and then eliminate all other fruit trees and shrubs which normally bear fruit during the spring and summer months, the insects are exposed throughout the summer to chances of injury, starvation, and other dangers, and find it very difficult to survive. Nearly 40,000 such fruit trees have been taken out in two citrus-growing counties of southern Texas to save the citrus industry there.

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ANNOUNCEMENT: You have just listened to a report from your farm reporter at Washington on some of the recent developments in the improvement and protection of some of our crops. That bulletin he mentioned on "Preparation of Fresh Tomatoes for Market" is free as long as the supply lasts. You can get it either from this station _____ or by writing direct to the United States Department of Agriculture, at Washington, D. C. for it; Ask for Farmers' Bulletin No. 1291.